

KENTUCKY PUBLIC SERVICE COMMISSION

Electric Distribution Utility Annual Reliability Report

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COMMISSION

SECTION 1: CONTACT INFORMATION

UTILITY NAME	1.1	Big Sandy RECC
REPORT PREPARED BY	1.2	Jeff Prater
E-MAIL ADDRESS OF PREPARER	1.3	jprater@bigsandyrecc.com
PHONE NUMBER OF PREPARER	1.4	(606) 791-4095

SECTION 2: REPORT YEAR

CALENDAR YEAR OF REPORT	2.1	2013
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SECTION 3: MAJOR EVENT DAYS

T_{MED}	3.1	7.2
FIRST DATE USED TO DETERMINE T_{MED}	3.2	January 1, 2009
LAST DATE USED TO DETERMINE T_{MED}	3.3	31-Dec-13
NUMBER OF MED IN REPORT YEAR	3.4	12

NOTE: Per IEEE 1366 T_{MED} should be calculated using the daily SAIDI values for the five prior years. If five years of data are not available, then utilities should use what is available until five years are accumulated.

SECTION 4: SYSTEM RELIABILITY RESULTS

Excluding MED

SAIDI	4.1	129.43
SAIFI	4.2	1.62
CAIDI	4.3	80

Including MED (Optional)

SAIDI	4.4	369
SAIFI	4.5	2.76
CAIDI	4.6	228

Notes:

- 1) All duration indices (SAIDI, CAIDI) are to be reported in units of minutes.
- 2) Reports are due on the first business day of April of each year
- 3) Reports cover the calendar year ending in the December before the reports are due.
- 4) IEEE 1366 (latest version) is used to define SAIDI, SAIFI, CAIDI, and T_{MED}

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SECTION 5: OUTAGE CAUSE CATEGORIES

Excluding MED

System Wide Outage Causes

CAUSE CODE DESCRIPTION	SAIDI VALUE	CAUSE CODE DESCRIPTION	SAIFI VALUE
520 Ice, Sleet, not tree 5.1.1	121.8	520 Ice, Sleet, not tree 5.2.1	0.80
420 Tree Growth 5.1.2	51.6	430 Out R/W trees 5.2.2	0.36
430 Out R/W trees 5.1.3	39.3	190 Planned/ Maintenz 5.2.3	0.33
300 Material or equiprr 5.1.4	30.9	300 Material or equiprr 5.2.4	0.28
190 Planned/ Maintenz 5.1.5	21.4	000 Power Supply 5.2.5	0.24
440 Trees with ice/sno 5.1.6	20.6	420 Tree Growth 5.2.6	0.15
999 Cause Unknown 5.1.7	12.9	999 Cause Unknown 5.2.7	0.13
510 Wind, not trees 5.1.8	9.7	510 Wind, not trees 5.2.8	0.07
000 Power Supply 5.1.9	5.2	600 Small Animal/Bird 5.2.9	0.04
600 Small Animal/Bird 5.1.10	1.7	790 Public, other 5.2.10	0.03

SECTION 6: Circuits Above 5-Year Average SAIDI

Average Individual Circuit SAIDI 150.9 Minutes

CIRCUIT IDENTIFIER	SAIDI VALUE	MAJOR OUTAGE CATEGORY
678 Sports Plex 6.1.1	861	430 Out of R/W Trees
1173 Decoy 6.1.2	640	430 Out of R/W Trees
256 Hargus 6.1.3	401	510 Wind/ not trees
466 Denver 6.1.4	331	420 Tree Growth
416 Beech Fork 6.1.5	304	430 Out of R/W Trees
720 Keaton 6.1.6	253	430 Out of R/W Trees
708 Denver 6.1.7	249	999 Cause Unknown
287 Tiger Mart 6.1.8	249	420 Tree Growth
392 Thelma 6.1.9	241	300 Material or equipment fault/failure
552 Boon's Camp 6.1.10	214	430 Out of R/W Trees
992 Cow Creek 6.1.11	208	190 Planned

Average Individual Circuit SAIFI 1.62

CIRCUIT IDENTIFIER	SAIFI VALUE	MAJOR OUTAGE CATEGORY
466 Denver 6.2.1	7.21	420 Tree Growth
678 Sports Plex 6.2.2	6.78	430 Out of R/W Trees
256 Hargus 6.2.3	4.74	510 Wind/ not trees
287 Tiger Mart 6.2.4	4.67	420 Tree Growth
416 Beech Fork 6.2.5	4.58	430 Out of R/W Trees
1173 Decoy 6.2.6	3.15	430 Out of R/W Trees
311 Spurlock 6.2.7	2.24	300 Material or equipment fault/failure
708 Denver 6.2.8	2	999 Cause unknown
392 Thelma 6.2.9	1.88	300 Material or equipment fault/failure
497 State Highway 6.2.10	1.65	430 Out of R/W Trees

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Additional pages may be attached as necessary
SECTION 7: VEGETATION MANAGEMENT PLAN REVIEW

See Attached Right-of-Way Plan

SECTION 8: UTILITY COMMENTS

The individual average SAIDI and SAIFI is calculated on 2013 data. Data will be added each year until we have a total of five years data at which point a rolling five year average will be used.

See attached Reliability Plan for Individual Circuits

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Big Sandy RECC Right-of-Way Plan and Procedures

Big Sandy RECC has 968 miles of distribution line.

Big Sandy's Right-of-Way plan has been revised in order to re-establish a systematic and sustainable maintenance schedule. Right-of-Way clearing is being scheduled on individual feeder circuits from each substation with clearing to the end of each feeder.

An updated schedule beginning in 2009 and ending in 2018 is planned to cut a complete cycle through the system.

Spraying is scheduled to begin in 2010 and ending with a complete cycle at the end of 2016.

Tree Growth Regulators will be used beginning in 2014 in an effort to evaluate their effectiveness in controlling Yard Trees.

Spraying of vines that overtake poles and guys will be increased in 2014.

Big Sandy RECC plans to utilize hourly paid and firm price contracts for all right of way cutting and herbicide application.

Circuit Prioritization

Big Sandy's staff is responsible for establishing a preventative maintenance strategy, identifying an appropriate routine maintenance cycle, prioritizing, scheduling and completing routine maintenance systematically and on the desired cycle.

Vegetation maintenance records, service interruption data, detailed Line Worker Reports, ground patrols and member-customer input all contribute to assigning priorities for vegetation maintenance each year.

There are several factors the Big Sandy's staff must consider when evaluating vegetation management needs. These include the frequency of service interruptions, vegetation quantities and characteristics, time elapsed since last treatment and member-customer requests.

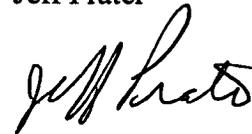
Right-of-Way Clearance Standards

1. Pruning Guidelines for On-R/W Trees - Effective tree clearance for line reliability is dependent on the voltage of the conductor, the type of tree, its growth rate and habit. Clearance shall be accomplished by ground cutting and removing all tall-growing tree species from within the R/W, whenever approved. Where pruning of residential or landscape trees become necessary, prune so as to provide a minimum of three (3) years of clearance. The guidelines for tree clearances apply at the time of pruning and clearing and are intended to

protect the wires under normal operating conditions. Special clearances may be needed at times because of field conditions. Additional allowance should be made for wires with excess sag.

2. Pruning Along Distribution R/W Edge or Off-R/W Trees - Every tree shall be trimmed ground-to-sky in accordance with ANSI A-300. To the extent practicable, these limbs shall be trimmed back to the trunk of the tree except on species that are susceptible to sun scald. Clear the R/W of all trees or brush thirty-five (35) feet wide for three phase lines and thirty (30) feet wide for single phase lines.
3. Shaping or rounding-over trees beyond the extent required to achieve the desired conductor/vegetation clearance shall not be performed, unless specifically approved by BIG SANDY or it's REPRESENTATIVE.
4. Only trees that are directly involved with BIG SANDY' overhead lines, as defined by this specification shall be pruned. Pruning trees for privately owned lines, other utility lines, or consumer lines or wiring is not permitted.
5. On all secondary lines and service drops, as directed by BIG SANDY or its REPERSENTATIVE, drops shall be cleared to the extent that the conductor can swing free of obstructions.
6. Big Sandy shall not prune trees solely for area lighting illumination.
7. All low growing desirable species, if present, may be left unless:
 - a. they create clearance problems,
 - b. mechanical, non-selective equipment (e.g. mowing) is used, or
 - c. they block access to the rights-of-way or prevent facilities maintenance.
8. Ingested wilting foliage of wild cherry is poisonous to livestock. Remove all wild cherry foliage from fields where livestock graze.
9. All stumps from manual clearing operations shall be treated with herbicides approved by BIG SANDY.

Jeff Prater



VP Operations



Big Sandy RECC
504 11th Street
Paintsville, KY 41240

March 5, 2014

Line Inspection Procedures

Distribution system inspection program is performed on a circuit by circuit basis patrolling approximately half of Big Sandy's circuit each year and completing the system each two years.

Inspectors patrol each circuit and meter location, record the meter reading, date of read, Inspector name and convey this information to the Billing Manager to validate the accuracy of each meter reading with the AMR system.

Pole inspections are performed by contract employees on approximately 10% of system poles each year. Inspection records are retained and staking personnel evaluate and create staking sheets for all failed poles. High priority poles are changed first, and others are scheduled in a timely manner.

Distribution- Overhead Line Patrol

- Clearances
 - Identify changed conditions that may require greater clearances.
 - Construction, structures under or near distribution lines.
- Foreign Structures
 - Antennas, towers, or attachments that conflict with primary lines.
 - Remove, or request help to remove any item that presents an imminent threat to public, or Co-op personnel.
- Attachments
 - Joint use attachment NESC clearances
 - Unauthorized Attachments
- Right-of-Way
 - Excessive re-growth
 - Yard Tree Problems
- Equipment
 - Excessively leaning, cracked poles
 - Broken grounds
 - Crossarms
 - Insulators
 - Loose Hardware
 - Climbing steps
 - Slack Guys

Distribution- Underground Line Patrol

- Locked Transformer/Junction Boxes
- Oil Leaks
- Warning sign on outside/ Danger sign inside
- Ground erosion, or consolidation (settlement)

Line Inspectors patrol and evaluate the system and may find additional issues or problems not named on this list.


Jeff Prater



Big Sandy RECC
504 11th Street
Paintsville, KY 41240

Reliability Plan for Individual Circuits

Circuits that exceed the 5 Year Average SAIDI shall be evaluated in the following ways:

1. Analyze the top interruption cause codes for that individual circuit.
 - a. Target improvements based on the analysis of the individual circuit.
2. Individual circuits with elevated "Equipment" interruption causes should be evaluated for the following:
 - a. Conductor condition
 - b. Amp loading
 - c. OCR/ fuse coordination
 - d. Conductor sag
3. Individual circuits with elevated "Maintenance" interruption causes should be evaluated for the following:
 - a. In Right of way trees
 - b. Out of Right of way trees
 - c. Poles, crossarm condition
4. Individual circuits with elevated "Weather" interruption causes should be evaluated for the following:
 - a. Span lengths
 - b. Possible windblown conductor
 - c. Excessive conductor sag
 - d. System hardening
 - e. System Grounding
5. Individual circuits with elevated "Animal" interruption causes should be evaluated for the following:
 - a. Installation of "Wildlife Guards"
 - b. Insulated Jumper wires
 - c. Other items that would insulate or reduce wildlife contacts
6. Individual circuits with elevated "Unknown" interruption causes should be evaluated for the following:
 - a. OCR/ fuse coordination
 - b. Lightning protection
 - c. System Grounding

Each individual circuit's Plan for improvement will be presented to President/General Manager for review and acted upon in a timely manner.

Jeff Prater

VP Operations